



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,092	07/28/2003	Masahiko Kawase	MURTP095X1	6381
22434	7590	12/08/2005	EXAMINER	
BEYER WEAVER & THOMAS LLP			PHAN, THIEM D	
P.O. BOX 70250			ART UNIT	
OAKLAND, CA 94612-0250			PAPER NUMBER	
			3729	
DATE MAILED: 12/08/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/629,092	KAWASE, MASAHIKO	
	Examiner	Art Unit	
	Tim Phan	3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/10/05, 8/12/04 &amp; 7/28/03</u>  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 2 is objected to because of the following informalities: it should be dependent to claim 1, instead of claim 10, which is unavailable. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nimi (US 5,820,995) in view of Kawase (US 6,362,723).

**As applied to claim 1**, Nimi discloses a method of producing the laminated composite ceramic (Column 5, lines 65-66) where a fixed resistance element can be used in series with a thermistor (Column 2, lines 38-40), in order to have integrated laminated composite ceramics (Col. 2, lines 5-7), comprising the steps of:

- preparing ceramic green sheet through a firing process (Column 4, lines 31-32 & 44-45) to become thermistor ceramic material or PTC sheet (Positive Temperature Coefficient) or NTC sheet (Negative Temperature Coefficient) (Column 4, lines 53-56),
- preparing the fixed resistor by using mainly the paste of barium titanate on the green sheet (Column 2, lines 19-21) and making the inner electrodes (Fig. 3B, elements 31 & 32) of the laminated component,
- stacking together different layers of green sheets (Fig. 4, column 6, lines 11-16) of PTC sheets and fixed resistor ones that can substitute for NTC (Column 2, lines 39-40) and compressing them under heat to form laminated composite ceramic with resistance value greater than 1 ohm (Column 8, table 2; column 9, tables 4 and 5),
- forming outer electrodes to the laminated composite ceramic (Fig. 3B, elements 51 & 61; column 6, lines 20-22),
- wherein there is no method steps difference between the PTC and NTC sheets as they differ from each other by varying the ratio of/and their composites (Column 4, lines 50-52).

Kawase teaches a process of producing thermistor that includes both PTC and NTC in series or parallel with a resistor (Col. 1, lines 8-15) and thermistor with NTC material in layered structure (Fig. 1; Col. 4, lines 10-13) with a resistor.

It would be obvious to one of ordinary skill in the art at the time the invention was made to apply the variety of thermistors, such as the one without PTC material, as taught by Kawase,

to the method of producing the laminated composite ceramic, as taught by Niimi, in order to have a variety of thermistors of integrated laminated composite ceramics.

**As applied to claim 2**, as best understood, Niimi teaches the claimed invention including the manganese oxide as green sheet or thermistor material (Column 4, line 35) except for the resistor paste to be selected from the group of PdO, Pd, Lu<sub>2</sub>O<sub>3</sub>, SiC and mixture thereof.

It would have been an obvious matter of design choice to use these elements from the group of PdO, Pd, Lu<sub>2</sub>O<sub>3</sub>, SiC and mixture thereof, since using these composite materials has nothing to do with or any particular purpose in the claimed method steps and it appears that the invention would perform equally well with resistor paste or inner electrodes made of nickel as main constituent (Column 4, lines 24 & 25).

### *Conclusion*

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tim Phan whose telephone number is 571-272-4568. The examiner can normally be reached on M - F, 9AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

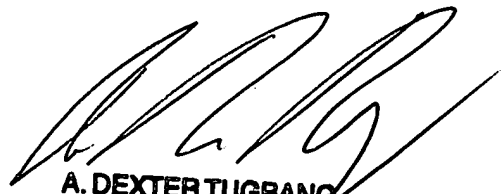
Art Unit: 3729

supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tim Phan  
Examiner  
Art Unit 3729

tp  
December 6, 2005



**A. DEXTER TUGBANG**  
**PRIMARY EXAMINER**